ColliderAccelerator EMS Assessment
ISO 14001

Date: May 20 & 21, 2002   Lead Auditor: M.Van Essendelft

Environmental Management System Model	**GENERAL REQUIREMENTS**
ELEMENT: 4.1 **TITLE:**	General Requirements

ISO 14001 STANDARD:	**NO**	**PARTIAL**	**YES**
The organization shall establish and maintain an environmental management system, the requirements of which are described in International Standard ISO 14001-1996	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD:
The C-A Department underwent formal registration by NSF in August 2000. The system has been established for almost two years. It is modeled around the Lab-wide SBMS subject areas and supplemented with internal Operating Procedures. The C-A OPM 1.10.2, Environmental Management Program Description, with associated attachments describes the program and points to related procedures and individuals responsible for carrying out EMS tasks. Certificates of registration are posted in the chairman's office and in the lobby of Building 911. The program is being routinely maintained. The significant aspects have been reviewed as well as the processes assessments, Environmental Management Program forms and Operational Control Forms.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):

COMMENTS: There are several noteworthy practices that were noted during the course of the audit:
1. C-A is actively recycling magnets (BAF & AGS Ring) and other materials in an effort to minimize waste.
2. C-A water systems are being redesigned to minimize potential impacts to the environment – additional closed loop systems, additional plc monitoring and additional Ozone treatment systems.
3. C-A documents its management review with a Record of Decision and tracks those decisions through its Family ATS.

EVALUATION:

☐ MEETS REQUIREMENT	☐ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
Has a program been established?
How long has the program been established?
Is it being maintained the requirements of International Standard ISO 14001-1996?

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Environmental Management System Model	**ENVIRONMENTAL POLICY**			
ELEMENT: 4.2	**TITLE:** Environmental Policy			

ISO 14001 STANDARD:	**NO**	**PARTIAL**	**YES**

Top Management shall define the organization's environmental policy and ensure that it:
   a) is appropriate to the nature, scale and environmental impacts of its activities, products, or services;
   b) includes a commitment to continual improvement and prevention of pollution;
   c) includes a commitment to comply with relevant environmental legislation and regulations, and with other requirements to which the organization subscribes;
   d) provides the framework for setting and receiving environmental objectives and targets;
   e) is documented, implemented, maintained and communicated to all employees;
   f) is available to the public.
	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD:
While this element was not reviewed it can be noted that the C-A has the current policy signed by interim Laboratory director, Peter Paul and it is posted as previously noted. Areas of the program audited evidence the fact that C-A has integrated the policy into its program.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):
OPM 1.10 – C-A Environmental, Safety and Health Policy, OPM 1.10.2 – Environmental Management Program Description

COMMENTS: There is a policy plaque in the Chairman's officeand the Lobby of 911.

EVALUATION:

☐ MEETS REQUIREMENT	☐ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
Is the policy defined and is it appropriate to the type, size, and environmental impacts of the Collider-Accelerator activities?
Does the policy include a commitment to continual improvement and evidence of such in the organization's operations?
Does the policy include a commitment to pollution prevention and evidence of such in the organization's operations?
Does the policy include a commitment to compliance to legal requirements and is there evidence indicating intent to comply?
Does the policy include a mechanism for setting and reviewing environmental objectives and targets?
Is the policy documented, implemented, maintained and communicated to all employees?
Is the policy available to the public?

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Environmental Management System Model	**PLANNING**		
ELEMENT: 4.3.1	**TITLE:**	Environmental Aspects	

ISO 14001 STANDARD:	NO	PARTIAL	YES
The organization shall establish and maintain (a) procedure(s) to identify the environmental aspects of its activities, products, or services that it can control and over which it can be expected to have an influence, in order to determine those which have or can have significant impacts on the environment. The organization shall ensure that the aspects related to those significant impacts are considered in setting its environmental objectives. The organization shall keep the information up-to-date.	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD:
The mechanism used to document Significant Aspects is the SBMS Subjects Area, Identification of Significant Environmental Aspects and Impacts. The C-A Department identifies environmental aspects during the planning phase of its operations using the Work Planning Systems, and Safety Review Systems. The work planning system has a section that addresses EMS for work done by C-A employees, BNL employees performing work in the C-A complex as well as external contractors performing work within the C-A complex. C-A has an EMS team which reviews the existing significant aspects on an annual basis.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):
OPM 2.28, C-A Procedure For Enhanced Work Planning
OPM 2.29, C-A Procedure For Enhanced Work Planning For Experimenters
OPM 9.1.12, Review of C-A Shielding Design
OPM 9.1.15, Guideline For Review Criteria For C-A Experiments
OPM 9.2.1, Reviewing Conventional Safety Aspects of an Experiment
OPM 9.3.1, Reviewing Conventional Safety Aspects of an Accelerator System
Phase II Process Evaluations
Environmental Aspects Matrix
OPM 1.10.2
EMS Task List 2002

COMMENTS: Aspects are appropriately covered, review and update is well managed.

EVALUATION:

☐ MEETS REQUIREMENT	☐ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
Is there a documented and maintained procedure to review and update aspects?
What mechanism is used to initiate aspect review/revision when operations change?
Is there knowledge and use of significance criteria?
Are there records showing that analysis to select significant aspects was done?
Was there effort to include aspects over which there is influence?
Are there any obvious aspects which should have been considered and were not? If not, why not?

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Environmental Management System Model	**PLANNING**		
ELEMENT: 4.3.2 **TITLE:** Legal and Other Requirements			

ISO 14001 STANDARD:	**NO**	**PARTIAL**	**YES**
The organization shall establish and maintain a procedure to identify and have access to legal and other requirements to which the organization subscribes, that are applicable to the environmental aspects of its activities, products or services.	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD:

Legal requirements come from external agencies to Laboratory level personnel. These requirements are communicated through the generation of subject areas. Cognizant C-A personnel have subscribed to the SBMS subscription Service which notifies users of new and updated subject areas. The C-A Department ECR also, as part of his job function, makes sure that the department is made aware of new requirements and works to assure department compliance to these requirements. The C-A EMP's list legal & other requirements as applicable. The ECR ensures the incorporation of new requirements as a member of the ASSRC and ESRC and through incorporation of new requirements into the process assessments.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):

OPM 1.10.2

COMMENTS:

EVALUATION:

■ MEETS REQUIREMENT	☐ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:

Is there a documented procedure for the organization to identify and have access to all applicable legal requirements?

Is someone (or more than one) designated to keep unit current on requirements?

What are that persons resources, references, methods to keep current?

How is applicability of new requirements determined?

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Environmental Management System Model	**PLANNING**				
ELEMENT: 4.3.3	**TITLE:**	Objectives and Targets			

ISO 14001 STANDARD:	NO	PARTIAL	YES
The organization shall establish and maintain documented environmental objectives and targets, at each relevant function and level within the organization. When establishing and reviewing its objectives, an organization shall consider the legal and other requirements, its significant environmental aspects, its technological options and its financial, operational and business requirements, and the views of interested parties. The objectives and targets shall be consistent with the environmental policy, including the commitment to pollution prevention.	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD:
C-A objectives and targets are built around the Laboratory's Critical Outcomes. The C-A application of the Laboratory's Critical Outcomes can be found in the C-A Self-Assessment Program. The C-A objectives and Targets are documented on an Environmental Management Program form which is linked to a Process Evaluation and the significant aspects of that process. Additionally the EMP documents the performance indicators, a description of the program, the potential environmental impacts, legal and other requirements, budget required, the tasks, person responsible for completing the tasks and completion dates. It also points a link to the operational controls

EXISTING PROCEDURES AND DOCUMENTATION (LIST):
Environmental Management Program Forms
Identification of Significant Environmental Aspects and Impacts
C-A Department Environmental Management Matrix of Objectives and Targets for Significant Aspects Form
C-A Self-Assessment 2002
BNL FY02 Critical Outcomes & Performance Measures
OPM 1.10.2

COMMENTS: None

EVALUATION:

☐ MEETS REQUIREMENT	☐ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
Has the organization established and maintained objectives and targets all significant aspects?
Have the documented objectives and targets considered legal and other requirements?
Are objectives and targets reasonable and measurable?
Is there a documented and maintained procedure for periodically reviewing objectives and targets?
Are objectives and targets communicated to the employees that are supposed to achieve them?
Do objectives and targets reflect a commitment to pollution prevention?

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Environmental Management System Model	**PLANNING**		
ELEMENT: 4.3.4	**TITLE:** Environmental Management Programme(s)		

ISO 14001 STANDARD:	NO	PARTIAL	YES

The organization shall establish and maintain (a) programme(s) for achieving its objectives and targets. It shall include:
   a) designation of responsibility for achieving objectives and targets at each relevant function and level of the organization;
   b) the means and time-frame by which they are to be achieved.
 	
If a project relates to new developments and new or modified activities, products or services, programme(s) shall be amended where relevant to ensure that environmental management applies to such projects.
	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD:
The EMP documents the performance indicators, a description of the program, the potential environmental impacts, legal and other requirements, budget required, the tasks, person responsible for completing the tasks and completion dates. It also points a link to the operational controls and is integrally tied to associated process evaluations with their respective aspects.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):
C-A Environmental Management Programs
C-A Family ATS
Phase II Corrective Action Tracking Database
Phase II P2 Tracking Database
Phase II APC Tracking Database

COMMENTS: The C-A Family ATS Program is used to assign responsibilities for completion of tasks in achieving objectives and targets and it has not been updated to reflect the newly assigned C-A Environmental Compliance Representative. This change is required to ensure proper notification and awareness for completing tasks (Ref. ATS 774.1.4)

EVALUATION:

☐ MEETS REQUIREMENT	■ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
Are there programs to achieve all the identified objectives and targets?
Do the programs include schedules for completion and resources necessary to achieve the objectives and targets?
Do the programs assign responsibilities for completion of tasks in achieving objectives and targets?
Do the programs specify performance indicators and methods in performing monitoring and measurement?
Are all procedures that supplement the EMP's available to the appropriate personnel and current?
Are operational controls in place and working as expected?
Are records of operational controls and performance indicators managed and retained per plans?

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Environmental Management System Model	**IMPLEMENTATION AND OPERATION**		
ELEMENT: 4.4.1	**TITLE:** Structure and Responsibility		

ISO 14001 STANDARD:	NO	PARTIAL	YES

Roles, responsibility and authority shall be defined, documented and communicated in order to facilitate effective environmental management.
 	
Management shall provide resources essential to the implementation and control of the environmental management system. Resources include human resources and specialized skills, technology and financial resources.
 	
The organization's top management shall appoint (a) specific management representative(s) who, irrespective of other responsibilities, shall have defined roles, responsibilities and authority for
    a) ensuring that environmental management system requirements are established, implemented and maintained in accordance with this International Standard;
    b) reporting on the performance of the environmental management system to the top management for review and as a basis for improvement of the environmental management system.
	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD: Management has committed the appropriate resources and is accountable for those actions during the monthly Department Chairman's meeting and the annual Management Review in addition to the weekly meetings scheduled per OPM 2.28 that culminate in the C-A Time Meeting. General and/or specific EMS responsibilities are documented on departmental personnels' R2A2. An EMS "core" team works within the department to assure implementation of the C-A EMS.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):
R2A2's (Top Management, C-A EMS representative and EMS team)
OPM 1.10
OPM 1.10.2

COMMENTS:
None

EVALUATION:

☐ MEETS REQUIREMENT	☐ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
Are roles and responsibility, and authorities defined, documented and communicated?
Has management provided the necessary resources (people, technology, money) to accomplish this EMS?
Has top management appointed an environmental management representative?
Does the R2A2 of the environmental management representative document sufficient authority to accomplish a & b above?

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Environmental Management System Model	**IMPLEMENTATION AND OPERATION**
ELEMENT: 4.4.2 **TITLE:**	Training, Awareness and Competence

ISO 14001 STANDARD:	NO	PARTIAL	YES

The organization shall identify training needs. It shall require that all personnel whose work may create a significant impact upon the environment, have received appropriate training.
It shall establish and maintain procedures to make its employees or members at each relevant function and level aware of
   a) the importance of conformance with the environmental policy and procedures with the requirements of the environmental management system;
   b) the significant environmental impacts, actual or potential, of their work activities and the environmental benefits of improved personal performance;
   c) their roles and responsibilities in achieving conformance with the environmental policy and procedures with the requirements of the environmental management system, including emergency preparedness and response requirements;
   d) the potential consequences of departure from specified operating procedures.
Personnel performing the tasks which can cause significant environmental impacts shall be competent on the basis of appropriate education, training and/or experience.
	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD:
The C-A department has developed job specific training for each of the process evaluations. This training deals with each one of the items (a-d) listed above. The Job Training Assessment (JTA) for each employee lists if this training is a requirement for them to perform their job. In addition to this training, 99% of C-A personnel have completed the BNL General Environmental Training Course. The C-A department has also conducted EMS awareness forums with those individuals whose work has a potential to impact the environment.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):
OPM 1.12, C-A JTA's, BTMS, C-A EMS job specific training procedures, BNL General Environmental Training Course

COMMENTS: During a review of EMS Training it was noted that, while the Drew contractor has the appropriate C-A training, he is not linked to a JTA for that training. Recommend that the Drew personnel be linked on the JTA to C-A training and that a review for similar contractor JTA omissions be performed.

EVALUATION:

☐ MEETS REQUIREMENT	■ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
Have training needs been identified for those whose work can have a significant impact on the environment?
Has the appropriate training been done and, where required, by qualified trainers?
Are procedures established and maintained to make employees aware of a – d above?
Are there specific, documented minimum requirements for each person performing a task that can cause significant environmental impact?

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Environmental Management System Model	IMPLEMENTATION AND OPERATION		
ELEMENT: 4.4.3	TITLE: Communication		

ISO 14001 STANDARD:	NO	PARTIAL	YES
With regard to its environmental aspects and environmental management system, the organization shall establish and maintain procedures for: 　　a) internal communication between the various levels and functions of the organization; 　　b) receiving, documenting and responding to relevant communication from external interested parties. The organization shall consider processes from external communication on its significant environmental aspects and record its decision.	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD: Internal communication is done through various ways but much of this is grounded in the work planning process which follows planned weekly meetings throughout the department. It is at these meetings where relevant information regarding EMS and information specific to a particular job or process is communicated. OPM 2.28 has an attachment that details weekly meeting. Additionally, internal communications come in the form of formal memos, e-mail, ATS notifications and responses and web postings. External communications are channeled through the BNL public affairs (SIGPA), other community action committees (BER, CAC), and are documented through the CCTS where applicable.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):
OPM 2.12
C-A Web site
CCTS
OPM 1.10.2

COMMENTS: Noteworthy practice – C-A has tried various techniques to communicate and keep employees aware of EMS within the department – notably, this year, through a bulletin entitled C-A Environmental Management System Highlights.

EVALUATION:

☐ MEETS REQUIREMENT	☐ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
Are there procedures and records that are maintained for communications and activities regarding the company's environmental aspects and its overall EMS?
How are internal communications between different levels and different functions documented?
How are the receiving, documenting and responding to relevant questions from interested parties documented?

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Environmental Management System Model	**IMPLEMENTATION AND OPERATION**		
ELEMENT: 4.4.4　**TITLE:**　Environmental Management System Documentation			

ISO 14001 STANDARD:	NO	PARTIAL	YES
The organization shall establish and maintain information, in paper or electronic form, to: 　　a) describe the core elements of the management system and their interaction; 　　b) provide direction to related documentation.	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD: The C-A Environmental Management Program Description details how the C-A EMS program is implemented through use of the BNL SBMS and the C-A Operational Procedures Manual. The Contacts and Responsibilities attachment gives pertinent information regarding individuals responsible at the department as well as the laboratory level. The Document Flow-down matrix gives a detail of the various documents of the C-A EMS.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):
OPM 1.10.2 – Environmental Management Program Description
OPM 1.10.2.a – C-A Organization Chart
OPM 1.10.2.b – C-A EMS Contacts and Responsibilities
OPM 1.10.2.c – C-A EMS Flow-down Document Matrix
OPM 1.10.2.d – C-A Environmental Management Matrix of Objective and Targets for Significant Aspects Form
BNL ISO 14001 "Plus" EMS Manual

COMMENTS: The following four recommendations were noted during the audit:
1. Consider including a listing of aspects and related SBMS SA's in Process Assessment.
2. Consider combining EMP's & OCF's into one document.
3. Consider incorporating submitted wording improvements into EMS Program Description.
4. Consider having ECR reviewing Work Planning forms (green sheets) for Environmental concerns.

EVALUATION:

☐　　MEETS REQUIREMENT	☐　　MINOR NONCONFORMANCE	☐　　MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
How is the department's EMS documented and maintained?
Does the EMS documentation address all ISO 14001 clauses?
Is there organizational flow and continuity between all EMS documentation?
Does the system document how the related documentation [regulations, permits, forms, etc.] is to be used?

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Environmental Management System Model	**IMPLEMENTATION AND OPERATION**		
ELEMENT: 4.4.5	**TITLE:** Document Control		

ISO 14001 STANDARD:	NO	PARTIAL	YES

The organization shall establish and maintain procedures for controlling all documents required by this International Standard to ensure that:
   a) they can be located;
   b) they are periodically reviewed, revised as necessary, and approved for adequacy by authorized personnel;
   c) the current versions of relevant documents are available at all locations where operations essential to the effective functioning of the environmental management system are performed;
   d) obsolete documents are promptly removed from all points of issue and points of use, or otherwise assured against unintended use;
   e) any obsolete documents retained for legal and/or knowledge preservation purposes are suitably identified.
 	
Documentation shall be legible, dated (with dates of revision) and readily identifiable, maintained in an orderly manner and retained for a specific period. Procedures and responsibilities shall be established and maintained concerning the creation and modification of the various types of document.
	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD: All C-A documents are on the Web and OPM 1.1, 1.2, 1.4, 1.4.3, 1.4.7, 13.4 detail how procedures are generated, reviewed, and maintained. The internal C-A procedures supplement the SBMS Internal Controlled Documents Subject Area and details items that are unique to the C-A Department.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):
OPM 1.1, OPM 1.2, OPM 1.4, OPM 1.4.3, OPM 1.4.7, OPM 13.4, OPM 13.4

COMMENTS: Minor nonconformance noted during a review of Web documentation. It was noted that the link for the LINAC EMP links to a LINAC process assessment drawing. Recommend the EMP be corrected and a review of EMS Web documentation be performed.

EVALUATION:

☐ MEETS REQUIREMENT	☐ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
Are there procedures for controlling and maintaining all documents required by this standard? Are the documents accessible?
Are the documents periodically reviewed, revised and approved for adequacy by authorized personnel?
Are latest versions of documents available in all areas and by all personnel that perform tasks essential to the effective functioning of the EMS?
Are obsolete documents removed from use and assured from unintended use? Are historical copies maintained & labeled?
Are those obsolete documents that are retained for legal or knowledge reasons clearly identified?
Are documents dated with the latest revision, orderly, legible and retained for a specified period?
Are there procedures that define the who and how of creating or modifying documents?

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Environmental Management System Model	**IMPLEMENTATION AND OPERATION**		
ELEMENT: 4.4.6	**TITLE:** Operational Control		

ISO 14001 STANDARD:	NO	PARTIAL	YES
The organization shall identify those operations and activities that are associated with the identified significant environmental aspects in line with its policy, objectives, and targets. The organization shall plan these activities, including maintenance, in order to ensure that they are carried out under specified conditions by: a) establishing and maintaining documented procedures to cover situations where their absence could lead to deviations from the environmental policy and the objectives and targets; b) stipulating operating criteria in the procedures; c) establishing and maintaining procedures related to the identifiable significant environmental aspects of goods and services used by the organization and communicating relevant procedures and requirements to the suppliers and contractors.	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD: Operational Control Forms are prepared in accordance with the SBMS Identification of Significant Aspects and Impacts SA and OPM 1.10.2. The OCF documents the operation, the activity/aspect(s) of the operation, the operational controls (C-A OPM's and other controls), necessary maintenance plans, actions to take if a control fails, records involved with the OCF, responsible individuals and training required for the operation.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):
OPM 1.10.2, OPM 2.28, OPM 2.5, OPM 6.1.10, OPM 9.1.15, OPM 9.2.1, OPM 9.3.1, OPM 8.32, OPM 2.19, OPM 8.20 Identification of Significant Aspects and Impacts, C-A Operational Control Forms, Cap Inspections, Experimental Safety Reviews

COMMENTS:
The following minor nonconformance was noted during the filed portion of the audit: During a review of the Water Systems Group's documentation for responses to make-up alarms it was noted that the CAS Watch had used the form (OPM-ATT-2.19.a) from the previous revision. L. Vogt noted that he had contacted the appropriate individual to discontinue use of the old form. Recommend that a follow-up be performed to assure that all old forms have been thrown out.

EVALUATION:

☐ MEETS REQUIREMENT	☐ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
Have the operations and activities been identified that are associated with the significant environmental aspects?
Are the identified operations and activities consistent with the company's policy, objectives and targets?
Is there a maintenance plan for the above identified operations and activities?
Have procedures been established and maintained for the above operations that, if they are not followed for these situations, could lead to deviations from the environmental policy and the objectives and targets?
Are operating criteria clearly established and documented in the procedures for the operations and activities identified above?
Have the significant environmental aspects of raw materials, supplies and services used in the above operations and activities been identified?
Are there procedures for handling raw materials, supplies and services used in the activities associated with significant impacts?
Are relevant procedures and requirements communicated to the appropriate suppliers and contractors?

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Environmental Management System Model	**IMPLEMENTATION AND OPERATION**
ELEMENT: 4.4.7 **TITLE:**	Emergency Preparedness and Response

ISO 14001 STANDARD:	NO	PARTIAL	YES
The organization shall establish and maintain procedures to identify potential for and respond to accidents and emergency situations, and for preventing and mitigating the environmental impacts that may be associated with them. The organization shall review and revise, where necessary, its emergency preparedness and response procedures, in particular, after the occurrence of accidents or emergency situations. The organization shall also periodically test such procedures where practicable.	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD: The emergency preparedness and response procedures for C-A are documented in Chapter 3 of the Operations Procedure Manual.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):
OPM 3.0

COMMENTS:
A drill to test emergency preparedness was performed by C-A on April 17, 2002. The results are documented in the C-A Environmental Program Support File. Procedural changes and training recommendations resulted from the drill and are being tracked in the C-A Family ATS. An additional drill will be performed in approximately 3 months.

EVALUATION:

☐ MEETS REQUIREMENT	☐ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
Are there maintained procedures to identify potential for accidents and emergency situations?
Are there maintained procedures to respond to accidents and emergency situations?
Are there maintained procedures to prevent and minimize the environmental impacts that may be associated with the identified accidents and emergency situations?
Are there reviews and revisions of the emergency preparedness and response procedures, particularly after an incident?
Are there periodical tests of the above procedures?

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Environmental Management System Model	**CHECKING AND CORRECTIVE ACTION**		
ELEMENT: 4.5.1	**TITLE:** Monitoring and Measurement		

ISO 14001 STANDARD:	**NO**	**PARTIAL**	**YES**
The organization shall establish and maintain documented procedures to monitor and measure, on a regular basis, the key characteristics of its operations and activities that can have a significant impact on the environment. This shall include the recording of information to track performance, relevant operational controls and conformance with the organization's environmental objectives and targets. Monitoring equipment shall be calibrated and maintained and records of this process shall be retained according to the organization's procedures. The organization shall establish and maintain a documented procedure for periodically evaluating compliance with relevant environmental legislation and regulations.	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD: Environmental performance monitoring is specified in C-A-QAP-1001. The C-A Environmental Compliance Representative is required to specify areas where compliance monitoring is required. The C-A QA is required to audit to assure that the compliance monitoring is accomplished. Other monitoring and measurement is performed as specified in the Operational Control Forms and associated Operational Procedures. With the exception of confirmatory air sampling performed by the C-A Radiological Control Technician there is no other equipment in the C-A EMS requiring calibration. Equipment used by Drew Chemical Corp. in the C-A Water System is calibrated by Drew and they have provided us with a copy of their ISO9001 certification and a copy of their calibration procedure.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):
FS-CAD-360
OPM 1.14, OPM 1.15, OPM 8.20, OPM 8.32, OPM 2.19

COMMENTS: None

EVALUATION:

☐ MEETS REQUIREMENT	☐ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
Are procedures documented and maintained to monitor and measure operations that can have a significant impact on the environment?
Is there a calibration system for monitoring equipment?
Does the company have a documented procedure for periodically evaluating compliance with environmental legislation and regulations?

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Environmental Management System Model	**CHECKING AND CORRECTIVE ACTION**		
ELEMENT: 4.5.2 **TITLE:** Nonconformance and Corrective and Preventive Action			

ISO 14001 STANDARD:	NO	PARTIAL	YES
The organization shall establish and maintain procedures for defining responsibility and authority for handling and investigating nonconformance, taking action to mitigate any impacts caused and for initiating and completing corrective and preventive action. Any corrective or preventive action taken to eliminate the causes of actual and potential nonconformances shall be appropriate to the magnitude of problems and commensurate with the environmental impact encountered. The organization shall implement and record any changes in the documented procedures resulting from corrective and preventive action.	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD: EMS nonconformances are documented by three mechanisms: Occurrence Reporting and Processing System (ORPS), Critiques, and through the SBMS Nonconformance & Corrective and Preventive Action subject area. Critiques and NCR's are tracked for closure and corrective action through the C-A ATS. ORPS reportable incidents are tracked to closure through a higher level Laboratory &DOE tracking system. Copies of Critiques and NCR's with supporting documentation were available and for review in the QA group. ORPS can be found through the C-A web site. Critiques and NCR's were noted as in the C-A ATS system. There were no ORPS reportable incidents since the last EMS audit.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):
OPM 1.10.2
OPM 10.0 series
SBMS Critiques SA
SBMS Occurrence Reporting and Processing System SA
SBMS Nonconformance & Corrective and Preventive Action SA
C-A ATS

COMMENTS: None

EVALUATION:

☐ MEETS REQUIREMENT	☐ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
Are procedures documented and maintained for defining responsibility and authority for handling, investigating and taking action to minimize impacts of nonconformances?
Are procedures documented and maintained for initiating and completing corrective and preventive action?
Are appropriate corrective and preventive actions taken?
Are the results of the corrective and preventive actions implemented and recorded?

ColliderAccelerator EMS Assessment
ISO 14001

Date: May 20 & 21, 2002   Lead Auditor: M.Van Essendelft

Environmental Management System Model	**CHECKING AND CORRECTIVE ACTION**		
ELEMENT: 4.5.3	**TITLE:** Records		

ISO 14001 STANDARD:	NO	PARTIAL	YES
The organization shall establish and maintain procedures for the identification, maintenance and disposition of environmental records. These records shall include training records and the results of audits and reviews. Environmental records shall be legible, identifiable, and traceable to the activity, product or service involved. Environmental records shall be stored and maintained in such a way that they are readily retrievable and protected against damage, deterioration or loss. Their retention times shall be established and recorded. Records shall be maintained, as appropriate to the system and to the organization, to demonstrate conformance to the requirements of this International Standard.	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD: Records are maintained in accordance with the SBMS Records Management subject area which is supplemented by C-A-OPM 13.4.1 – Records Management, and C-A-OPM 13.4.2 – Records Index. The Records Index has a specific attachment detailing the EMS Records with the C-A Department. This index lists the name of the record, the record custodian, the record schedule and the retention.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):
SBMS Records Management SA
C-A-OPM 13.4.1
C-A-OPM 13.4.2

COMMENTS: None

EVALUATION:

☐ MEETS REQUIREMENT	☐ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
Are procedures documented and maintained for the identification, maintenance and disposition of environmental records?
Are the records legible, identifiable and traceable to the activity, product or service involved?
Are the records stored and maintained such that they are readily retrievable and protected against damage, deterioration or loss?
Are there documented specified retention times for all of the records identified?
Are the records maintained in a manner to demonstrate accordance with the standard and appropriate to the system and the organization?

ColliderAccelerator EMS Assessment
ISO 14001

Date: May 20 & 21, 2002

Lead Auditor: M.Van Essendelft

Environmental Management System Model	**CHECKING AND CORRECTIVE ACTION**		
ELEMENT: 4.5.4	**TITLE:** Environmental Management System Audit		

ISO 14001 STANDARD:	**NO**	**PARTIAL**	**YES**

The organization shall establish and maintain (a) programme(s) and procedures for periodic environmental management system audits to be carried out, in order to:
   a) determine whether or not the environmental management system
     1) conforms to planned arrangements for environmental management, including the requirements of this International Standard; and
     2) has been properly implemented and maintained; and
   b) provide information on the results of audits to management.
 	
 The organization's audit programme, including any schedule, shall be based on the environmental importance of the activity concerned and the results of the previous audits. In order to be comprehensive, the audit procedures shall cover the audit scope, frequency and methodologies, as well as the responsibilities and requirements for conducting audits and reporting results.
	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD: The EMS audit is scheduled and performed in accordance with the C-A Department FY2002 Self-Assessment Program. The C-A QA group maintains a database of audit schedules as well as audits and audit reports. Audits are conducted in accordance with the SBMS Environmental Assessments subject area and OPM 1.10.2. An Audit Plan was generated as well as an Audit Schedule and Audit Notification.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):
OPM 1.10.2
SBMS Environmental Assessments SA
C-A-QAP-1001 Independent Assessment
C-A Department FY 2001 Self-Assessment Program

COMMENTS: Recommend developing a surveillance schedule to audit the entire C-A EMS over a three-year period.

EVALUATION:

☐ MEETS REQUIREMENT	☐ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
Are procedures documented and maintained for periodic EMS audits?
Does the procedure for EMS audits include the scope of the audit, frequency, methodologies used, responsibilities, requirements, and method of reporting results.
Does the EMS audit determine whether their EMS has been implemented and maintained and conforms to this standard?
Does the EMS audit provide results of the audits to management?

ColliderAccelerator EMS Assessment
ISO 14001

Date: May 20 & 21, 2002   Lead Auditor: M.Van Essendelft

Environmental Management System Model	**MANAGEMENT REVIEW**
ELEMENT: 4.6 **TITLE:** Management Review	

ISO 14001 STANDARD:	NO	PARTIAL	YES
The organization's top management, shall at intervals that it determines, review the environmental management system, to ensure its continuing suitability, adequacy, and effectiveness. The management review process shall ensure that the necessary information is collected to allow management to carry out this evaluation. The review shall be documented. The management review shall address the possible need for changes to policy, objectives and other elements of the environmental management system, in the light environmental management system audit results, changing circumstances and the commitment to continual improvement.	☐	☐	☐

FACILITY IMPLEMENTATION OF STANDARD: The management review was found to be very comprehensive. It specifically addressed each of the areas listed above as part of a question and answer session during the review. Additionally, on an as needed basis issues are addressed or brought to top management's attention at the monthly Department Chairman's meetings.

EXISTING PROCEDURES AND DOCUMENTATION (LIST):
OPM 1.10.2
SBMS Environmental Assessments SA
C-A Management Review Agenda (2001)
C-A Management Review (2001)
C-A Management Review Minutes (2001)
C-A Record of Decision (2001)

COMMENTS: The 2002 EMS Management Review is scheduled for September 2002.

EVALUATION:

☐ MEETS REQUIREMENT	☐ MINOR NONCONFORMANCE	☐ MAJOR NONCONFORMANCE

AUDIT QUESTIONS:
Has the top management performed a documented review of the EMS on a periodic basis?
Does the review address the system's continued suitability, the system's adequacy, the system's effectiveness, the system's possible need to change its policy, the system's possible need to change its objectives and other elements of the EMS in light of the audit results, continual improvement, etc., the system audit as required in 4.5.4, and the Nonconformances and Corrective and Preventive Action?
Is there a record of decision which outlines actions for the coming year?